
REFINING THE ALASKA OFF-ROAD POINT COUNT PROGRAM, PART II

January 14, 2003, Alaska Bird Observatory, 418 Wedgewood Drive, Fairbanks, Alaska 99701

INTRODUCTION AND GENERAL SUMMARY OF THE MEETING

On January 14, 2003, *Boreal Partners in Flight* convened to discuss refining the Alaska Off-road Point Count Program. Approximately 30 members from interior Alaska were in attendance. The overall goal of the meeting was to identify what steps need to be taken in order to implement a broader and more statistically robust monitoring program for landbirds that meets the information needs of the agencies and individual conservation units in Alaska. We discussed several topics including:

- Goals, methods, and latest updates on the Alaska Off-road Point Count Program.
- Developing a sampling design to incorporate intensive inventories and long-term monitoring.
- Developing a pilot program for 2003.
- Developing a technical steering committee.
- Developing a list server to keep our discussions active.
- Covering costs of the survey, particularly for the Refuges.
- The need to include habitat metrics for the structure of forested habitats (i.e. density, size, and age of trees and snags) and their topographic position (i.e. flood plain, upland, toe of slope, mid-slope, ridge).

The information that follows includes the agenda and a summary of what was discussed during the meeting. The presentations by Colleen Handel, Karen Oakley, Maggie MacCluskie, and Tom Paragi and Bob Ott (see agenda below) are presented on the *Boreal Partners in Flight* website (www.absc.usgs.gov/research/bpif/bpif.html) under recent meetings. Summaries of these talks are therefore not included below. Also available on the website is an ArcView project for downloading that contains coverages with the locations of the proposed sampling blocks and survey points throughout the state (TABLE 1).

I thank everyone who attended the meeting. The presentations were excellent and our discussions were productive. Special thanks to Nancy DeWitt and Andrea Swingley for hosting the meeting at the Alaska Bird Observatory. If you have any questions about our discussions or suggestions on where we should take the Alaska Off-road Point Count Program please feel free to contact me. Your thoughts and comments are always appreciated.

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AGENDA

- 8:30 Introductions and goals of the meeting.—*Steve Matsuoka, USFWS Migratory Bird Management.*
- 8:45 Alaska Off-road Point Count Program: program goals, methods, and recent developments.—*Colleen Handel, USGS Alaska Science Center.*
- 9:25 Rules of thumb for developing a successful program for long-term monitoring.—*Karen Oakley, USGS Alaska Science Center.*
- 9:50 The National Park Service's Inventory and Monitoring Program.—*Maggie MacCluskie, NPS Inventory and Monitoring Program.*
- 10:05 A field perspective on conducting landbird surveys in remote locations: tradeoffs between sampling design, logistical constraints, and program goals.—*Carol McIntyre, NPS Denali National Park and Preserve.*
- 10:25 Break
- 10:40 Summary of Dec. 13th meeting in Anchorage.—*Steve Matsuoka, USFWS.*
- 11:00 Discussion: Issues of scale and inference—conservation units, Bird Conservation Regions, and the state. Topics include 1) what information is gained for the individual land units; 2) selecting the appropriate spatial scale for long-term monitoring; and 3) scaling effort to meet land unit, regional, and state-wide needs for inventory and monitoring.
- 12:00 Lunch
- 1:15 Discussion: What steps do we need to take in order to implement the Alaska Off-road Point Count Program? Topics include 1) outlining high priority issues that need to be addressed in order to move the program forward, 2) developing a steering committee for addressing high priority program needs, 3) ideas on pilot efforts for 2003, and 4) nominations for a new name for the program.
- 3:30 Break
- 3:45 Making habitat measured at point count stations useful for other ecological disciplines.—*Tom Paragi, Alaska Department of Fish and Game and Robert Ott, Tanana Chiefs Conference.*
- 4:30 Wrap Up
- 5:00 Adjourn

INVENTORY AND MONITORING OF LANDBIRDS: MEETING THE NEEDS OF INDIVIDUAL LAND UNITS, THE BIRD CONSERVATION REGIONS, AND THE STATE

Many participants felt that we should utilize Colleen's flexible sampling design for surveying landbirds to help meet the information needs of the individual land units, the Bird Conservation Regions, and the state as a whole. Most biologists stressed that, in addition to statewide and regional monitoring, they need inventory data on species occurrence, abundance, and habitat distribution that is specific to the land units that they manage. Therefore a design that incorporates both long-term monitoring and short-term inventories was proposed by the group. Everyone agreed that, regardless of the design adopted, timely data analysis and reporting will be essential for this program to be a success.

The proposed design

It was proposed that we design, for interested land units, an inventory that could be completed over a 5-year period. For those land units participating in the inventory, allocation of sampling

for regional and statewide monitoring (TABLE 1) would instead be directed toward an intensive inventory. After the inventory is completed samples could then be rolled into the monitoring design. Monitoring could thereafter proceed at different spatial scales as follows.

- A subset of inventory routes could be resampled biennially to help estimate regional and statewide trends in population size. Blocks sampled during the last 2 years of the inventory could potentially serve as the initial samples for long-term regional and statewide monitoring. Thus broad-scale monitoring could begin before the inventory is completed.
- Monitoring specific to individual land units could be accomplished by resampling the planning area at some specified time frame in the future (i.e. 10 – 20 years), following an identified ecological disturbance (i.e. large fires, climate change, or West Nile virus), or when state-wide/regional monitoring has identified problems within the planning area.

Although information from an intensive inventory is valuable several people warned that such efforts are expensive, difficult to plan and conduct, and require considerable time to manage and analyze the data. As such it is unlikely that all land units will conduct the initial inventories.

TABLE 1. Proposed allocation of biennial surveys by land unit for regional and statewide monitoring of landbirds in Alaska. Biennial surveys are divided into two groups such that 100 blocks are surveyed across the state each year.

Agency	Name	No. survey blocks	Agency	Name	No survey blocks
BLM	Nat Petroleum Reserve	22	NPS	Alagnak Wild River	0
BLM	Steele National Conserv. Area	1	NPS	Aniakchak	1
BLM	White Mts National Reserve	1	NPS	Bering Land Bridge	3
Bureau of Land Management Total		24	NPS	Cape Krusenstern	1
FS	Admiralty Is National Monument	1	NPS	Denali	5
FS	Chugach National Forest	6	NPS	Gates of the Arctic	9
FS	Misty Fjords National Monument	3	NPS	Glacier Bay	2
FS	Tongass National Forest	14	NPS	Katmai	4
Forest Service Total		24	NPS	Kenai Fjords	0
FWS	Alaska Maritime	6	NPS	Klondike Gold Rush NHP	0
FWS	Alaska Peninsula	5	NPS	Kobuk Valley	2
FWS	Arctic	22	NPS	Lake Clark	3
FWS	Becharof	1	NPS	Noatak	7
FWS	Innoko	6	NPS	Sitka NHP	0
FWS	Izembek	0	NPS	Wrangell-St.Elias	9
FWS	Kanuti	2	NPS	Yukon-Charley Rivers	4
FWS	Kenai	2	National Park Service Total		50
FWS	Kodiak	2	NWSR	Beaver Creek	0
FWS	Koyukuk	5	NWSR	Birch Creek	0
FWS	Nowitna	2	NWSR	Delta	0
FWS	Selawik	3	NWSR	Fortymile	1
FWS	Tetlin	1	NWSR	Gulkana	0
FWS	Togiak	6	NWSR	Unalakleet	0
FWS	Yukon Delta	25	Wild & Scenic River Total		1
FWS	Yukon Flats	13	GRAND TOTAL		200
Fish and Wildlife Service Total		101			

Stratifying sampling by habitats

One issue with the inventory that we discussed at length was whether to stratify samples by habitat or to draw samples in a strictly random fashion. Stratifying sampling by habitat is attractive for inventory purposes, particularly if there is no intention to repeat the surveys to assess changes in population size.

- Benefits of stratification include:
 - Samples a wider range of habitats and avoids over sampling common habitats. For example, some people were concerned that a random selection of survey locations in interior Alaska would oversample black spruce forests. Unless a large number of random locations were sampled in the region important habitats could be missed.
 - Better for sampling those habitats that are rare or linear in configuration.
 - Generally better precision than strictly random sampling when estimating population size; however, random samples can be post-stratified to increase precision.
 - Good for testing the effects of particular management actions (i.e. fire, forestry), or drawing inferences for particular habitats.
- Problems with stratification for inventory purposes:
 - Many land units have poor landcover maps. Therefore the information to base stratification upon is not always good.
 - There are currently no regional or state-wide land classification schemes that transcend the boundaries of the land units. Thus we have limited options of combining data among land units to draw inferences on distribution and habitat use. Elevation and topography were suggested as an alternative basis for stratification; however, relationships between topography and habitat are not always consistent.
- Problems with stratification for long-term monitoring:
 - Random sampling is clearly better for long-term, broad-scale monitoring. Under random sampling, inference across the planning area is maintained over time through changes in the distribution and relative abundance of habitats. Under stratified random sampling, inference is lost as habitats undergo change. For example you may initially start with samples that are randomly allocated to a particular habitat type, but as that habitat changes in its distribution and abundance over time you no longer have a random sample of that habitat.
 - Because habitats change through time a random selection of routes will need to be drawn for each successive sampling time frame in order for the monitoring program to maintain broad inference across the planning area. This will add a significant additional layer of planning and logistics to the overall effort.
 - Spatial variation in abundance is generally larger than temporal variation. Thus to detect changes in population size over time it is more effective to resample the same routes than draw a new random sample for each successive sampling period.
 - Resolution, accuracy, and quality of landcover maps will improve with time. Therefore the initial classification systems used for stratifying samples may quickly become archaic with technological advances.

- Random sampling is generally much more flexible. You can post-stratify random samples by habitats, new habitat classification systems, or relative to management questions. Also random sampling is generally much better than stratified random sampling for capturing the effects of unanticipated disturbances.
- Uncommon habitats: Due to limited resources we will not be able to sample all vegetation communities with sufficient intensity to make strong inferences. Rare habitats and habitats that are linear in configuration (i.e. riparian) are difficult to sample using random sampling and are not likely to be surveyed adequately if habitats are sampled proportions to availability. For these types of habitats we will be faced with making some compromises concerning the spatial scale of inference or the range of uncommon habitats sampled.
 - *Compromises in the spatial scale of inference.*—For intensive inventories we will be able to draw strong inference for the relatively common habitats at the scale of the individual land units. However, inference at the land unit scale will be much poorer for the less common habitat types. However, we could combine samples of uncommon habitats across land units and then draw inferences at the regional level.
 - *Compromises in habitats sampled.*—Another alternative would be to sample randomly across the landscape but augment these random samples of mostly common habitats with additional surveys that are targeted to those habitats for which we have specific management concerns (i.e. riparian habitat, forests with commercial volumes of timber, etc.).

Pilot field effort for 2003

The new random girds will be much more difficult to plan for and survey than the previous non-random routes. The group therefore agreed that a pilot effort in 2003 would be useful to evaluate the proposed changes to the program.

- A goal for the pilot program is to sample at least *5 blocks for each Bird Conservation Region* in Alaska. This will give us an idea of the difficulties associated with conducting the surveys under a wide range of conditions.
- Participation will be voluntary.
- Colleen Handel has agreed to determine the survey locations for a 5-year inventory for those land units interested in participating in the pilot program. *Target date for the new allocation is February 15th.*
- **If you are interested in participating in the pilot study please contact Colleen Handel at 786-3418, colleen_handel@usgs.gov.**

Communication

We agreed that in order to keep the program moving forward we need to keep communication active among our members.

- *List serve.*—Several people suggested that it would be useful to set up a list serve to help facilitate information transfer and discussion among our members. Steve Matsuoka will try to set this up by mid February.

- *Technical Committee.*—We also felt it would be useful to have a technical committee to help with the development and assessment of training programs, field methods and protocols, and field manuals.
 - Some of the people that were interested in helping included: Karin Lehmkuhl (Koyukuk/Nowitna NWR), Merry Maxwell (Kanuti NWR), Deb Nigro (BLM), Melanie Cook (Yukon Charley Rivers NP), Karen Oakley (USGS).
 - **We will need committee members to represent the other Bird Conservation Regions as well. If you are interested in helping serve on the technical committee please contact Steve Matsuoka.**

Costs

- Deb Nigro estimates that it costs approximately **\$3,000 to sample each survey block**. Mark Bertram independently came up with a similar estimate. Keep in mind that this does not include the costs of training, data management, analysis, and reporting.
- Some suggested that the time and costs associated with data entry could be substantially reduced if we input the data into hand held computers in the field.
- It is estimated that data management, analysis, and reporting will probably comprise ~30% of total project costs. We may need to look for additional funds to fully support this component of the program. Karen Oakley has recommended that we begin looking toward the National Status and Trends program of the USGS.
- *Refuge Operation Needs Support (RONS).*— Mark Bertram (Yukon Flats NWR) has volunteered to take the lead on developing a region-wide RONS package that will request base funds for all of the Refuges in Alaska to participate in the Alaska Off-road Point Count Program.
 - Colleen will be providing Mark the number of sample blocks for each Refuge.
 - Mark will then estimate costs for each Refuge based this sampling allocation.
 - Estimates of costs will be distributed to each Refuge for review and comments.
 - **Proposal will be completed and submitted by the May 3, 2003.**